

REMARKS

The present invention is a method of handing over a mobile node from a first access router to a second access router, a method, a mobile IP network and an access router having a processor that executes computer-readable instructions for performing a method of handing over a mobile node from another access router. A method of handing over a mobile node from a first access router to a second access router in accordance with an embodiment of the invention includes sending a request message from the second access router to the mobile node 106 and 206; and in response to the received request message, the mobile node sends a connectivity report from the mobile node to the access router 108 and 208. The mobile node obtains IP connectivity with the second access router and the request message is sent after the mobile node has obtained IP connectivity with the second access router. See page 10, lines 16-22, for a discussion of the generation of connectivity reports by the mobile node.

The present invention provides a solution for Denial of Service attacks by having a second (new) access router send a request for a connectivity report from a particular mobile node. Only selected mobile nodes are selected to send a request for a connectivity report which include information such as information about the first(old) access router such as an IP address or a layer 2 identification. The second access router may utilize policies to identify a particular mobile node before sending the request which helps prevent the possibility of false entries in the cache of the new access router. See page 10, lines 9-15 of the specification,

Claims 1-5, 8, 10-13, 16, 18-21, 23, 26, 27 and 29 stand rejected under 35 U.S.C. §102 as being anticipated by U.S. Publication 2002/0068570 (Abrol et al).

The Examiner reasons as follows:

The claimed invention reads on Abrol et al. as follows:

Regarding claims 1,2,10,11,19,26 and 27, Abrol et al. discloses a method (fig. 5) of handing over a mobile node from first access router (radio access network) (RAN) to a second access router radio access network) (RAN) (paragraph 0013) comprising: sending a request message from the second access router (RANb 34) to the mobile node (MS) (paragraph 0035 lines 1-5); and in response to the received request message, sending a connectivity report from the mobile node to the second access router (paragraph 0035 lines 1-10). Abrol et al. further discloses prior to sending the request message from the second access router to the mobile node (paragraph 0035 lines 1-5), the mobile node obtains connectivity with the second access router by moving into a geographic location associated with the second access router (paragraph 0035 lines 1-5).

Regarding claims 3,12 and 20, Abrol et al. discloses an IP address of the first access router (paragraph 0026 and paragraph 0030).

Regarding claims 4,13 and 21, Abrol et al. discloses identifier (PRE_PZID) of the first access router (RANA 32) (paragraph 0034 line 6 through paragraph 0035 line 16).

Regarding claim 5, Abrol et al. discloses an identifier (PPP) of an Access Point (PDSN) attached to the first access router (paragraph 0036).

Regarding claims 8,16,23 and 29, Abrol et at. discloses performing a handover of the mobile node from the first access router to the second access router after sending the connectivity (paragraph 0013 and paragraph 0037) .

Regarding claim 18, Abrol et al. discloses a mobile IP network (fig. 1 number 18) comprising: a first access router (fig. 1 number 32) sending a request message from the second access router (fig. 1 number 34) to the mobile node (MS) (fig. 1 number 2 and paragraph 0035 lines 1-5); and in response to the received request message, sending a connectivity report from the mobile node to the second access router (paragraph 0035 lines 1-10).

These grounds of rejection are traversed for the following reasons.

Each of the independent claims substantively recites sending a request message from a second access router to the mobile node and in response to the received request message, sending a connectivity report from the mobile node to the second access router advising that the mobile node contained connectivity or IP level connectivity with the second access router. This subject matter is not disclosed by Abrol et al.

The Examiner states that paragraph [0035], lines 1-5, of Abrol et al disclose sending a request message from the second access router to the mobile node and further, paragraph [0035], lines 1-10, disclose sending a connectivity report from the mobile node to the second access router. However, what is described in paragraph [0035] is that once the mobile device leaves the coverage area of radio access network 32 and enters the coverage area of the radio access network 34, the MS decodes the overhead messages broadcast by the base stations in the radio access network 34. There is no sending of a request message from the second access router to the mobile node described in this sequence. Furthermore, what is described when the MS 2 detects a change in the packet zone ID (PZID), the MS2 sends a 'fake' origination to the radio access network 34. In other words, the initial communication is sent from the MS2 to the radio access network instead of, as set forth in the claims substantively, that a request message from the second access router is sent to the mobile node which in accordance with the present invention as discussed above provides the benefit of controlling the mobile nodes which are involved in the handover from a first access router to a second access router. The connectivity report provides the second access router with information providing the

second access router the ability to prevent denial of service attacks from a malicious mobile node .

In fact, there is no request message disclosed in Abrol et al who disclose the aforementioned movement of an MS throughout multiple radio access networks. Moreover, it is submitted that there is no disclosure in Abrol et al that in response to the received request message a connectivity report is sent from a mobile node to the second access router as recited substantively in the independent claims as rejected. It is unclear what the Examiner considers the connectivity report to be in lines 1-10 of paragraph [0035] of Abrol et al. It is submitted that there is no disclosure in Abrol et al of sending a connectivity report from the mobile node to the second access router as recited in the independent claims. If the Examiner persists in the stated grounds of rejection, it is requested that he point out specifically on the record what he considers the connectivity report to be disclosed in Abrol et al.

The dependent claims define more specific aspects of the present invention which are not anticipated by Abrol et al for the reasons set forth above with respect to the independent claims. Claims 3-5, 12, 13, 17, 21 and 22, further define the connectivity report and therefore, are not anticipated for the reasons set forth above that there is no connectivity report. Moreover, Abrol et al do not disclose a connectivity report having the limitations of the aforementioned claims.

Claims 6, 7, 14, 15, 24, 25, 30 and 31 stand rejected under 35 U.S.C. §103 as being unpatentable over Abrol et al in view of United States Publication 2003/0210674 (Honkasalo et al). Honkasalo et al have been cited as teaching a base station for selecting one mobile station from a plurality of mobile stations in

order to allocate a packet data channel. This does not cure the deficiencies noted above with respect to the anticipation rejection.

Claims 9, 17, 22 and 28 stand rejected under 35 U.S.C. §103 as being unpatentable over Abrol et al in view of U.S. Publication 2004/0092264 (Koodli et al).

Koodli et al have been cited as performing handover of a mobile node from a first access router to a second access router before sending the connectivity report with the Examiner citing paragraphs [0020] through [0024]. However, it is submitted that paragraphs [0020] - [0024] do not disclose a connectivity report

For example, paragraph [0024] of Koodli et al concludes that "[m]obile node 103 may then disassociate itself from CR 108 in an attempt to establish connectivity with the MR 106." It is therefore seen that there is no connectivity report as recited in the claims, since the handover from CR 108 to 106 has not occurred.

Newly submitted dependent claims 32-35 further limit the independent claims by reciting that the mobile node obtains IP connectivity with the second access router and the request message is sent after the mobile node has obtained the IP connectivity with the second access router. This subject matter is neither anticipated or rendered obvious by Abrol et al alone or in combination with Honkasala et al ad/or Koodli et al.

In view of the foregoing amendments and remarks, it is submitted that each of the claims in the application is in condition for allowance. Accordingly, early allowance thereof is respectfully requested.

To the extent necessary, Applicants petition for an extension of time under 37 C.F.R. §1.136. Please charge any shortage in fees due in connection with the

filing of this paper, including extension of time fees, to Deposit Account No. 01-2135 (0172.42531X00) and please credit any excess fees to such Deposit Account.

Respectfully submitted,

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Attachments

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